

This Page Is Inserted by IFW Operations  
and is not a part of the Official Record

## **BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning documents *will not* correct images,  
please do not report the images to the  
Image Problem Mailbox.**

**Motion vector conversion method and conversion apparatus**

Patent Number: ☐ US2002118745  
Publication date: 2002-08-29  
Inventor(s): TAKAHASHI KUNIAKI (JP); SATO KAZUSHI (JP); SUZUKI TERUHIKO (JP)  
Applicant(s):  
Requested Patent: ☐ JP2002118851  
Application Number: US20010970308 20011004  
Priority Number(s): JP20000310836 20001011  
IPC Classification: H04B1/66; H04N7/12; H04N11/02; H04N11/04  
EC Classification:  
Equivalents:

---

**Abstract**

---

---

Data supplied from the [esp@cenet](mailto:esp@cenet) database - I2



US 20020118745A1

(19) **United States**(12) **Patent Application Publication** (10) Pub. No.: **US 2002/0118745 A1**  
Takahashi et al. (43) Pub. Date: **Aug. 29, 2002**(54) **MOTION VECTOR CONVERSION METHOD  
AND CONVERSION APPARATUS**

(52) U.S. Cl. .... 375/240.02

(76) Inventors: Kuniki Takahashi, Kanagawa (JP);  
Kazushi Sato, Shinagawa-Ku (JP);  
Teruhiko Suzuki, Chiba (JP)(57) **ABSTRACT**Correspondence Address:  
**RADER FISHMAN & GRAUER PLLC**  
**LION BUILDING**  
**1233 20TH STREET N.W., SUITE 501**  
**WASHINGTON, DC 20036 (US)**

The invention provides a motion vector conversion method by which the coding efficiency in image coding of MPEG4 in an image information conversion method can be augmented. In the motion vector conversion method for an image information conversion method wherein a bit stream representation of interlaced scanned image compression



US 20020118745A1

(19) **United States**(12) **Patent Application Publication**  
Takahashi et al.(10) Pub. No.: **US 2002/0118745 A1**(43) Pub. Date: **Aug. 29, 2002**(54) **MOTION VECTOR CONVERSION METHOD  
AND CONVERSION APPARATUS**

(52) U.S. Cl. .... 375/240.02

(76) Inventors: Kunikida Takahashi, Kanagawa (JP);  
Kazuo Sato, Shinagawa-Ku (JP);  
Teruhiko Suzuki, Chiba (JP)(57) **ABSTRACT**Correspondence Address:  
**RADER FISHMAN & GRAUER PLLC**  
**LION BUILDING**  
**1233 20TH STREET N.W., SUITE 501**  
**WASHINGTON, DC 20036 (US)**

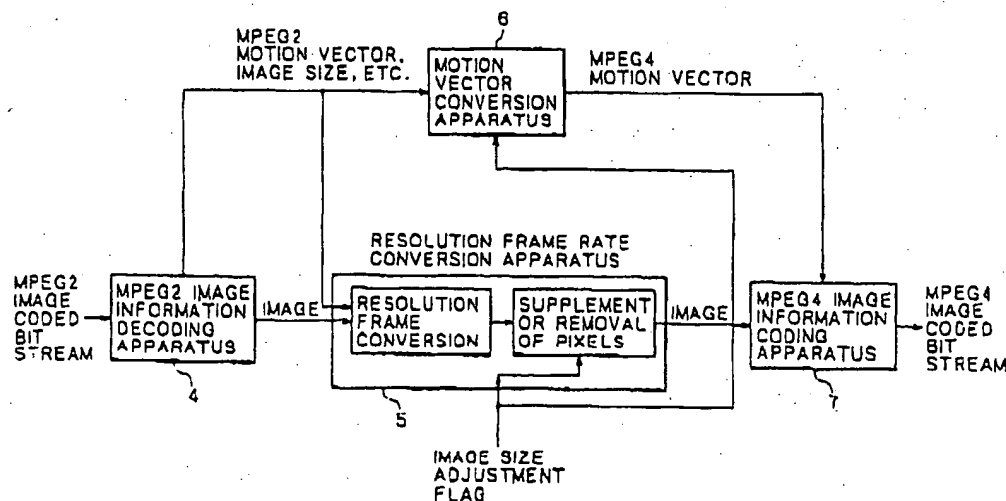
The invention provides a motion vector conversion method by which the coding efficiency in image coding of MPEG4 in an image information conversion method can be augmented. In the motion vector conversion method for an image information conversion method wherein a bit stream representative of interlaced scanned image compression information of MPEG2 is inputted and a bit stream representative of progressively scanned image compression information of MPEG4 is outputted, 16x16 motion vectors of MPEG2 of the inputted bit stream representative of image compression information of MPEG2 are accepted successively, and 8x8 motion vectors of MPEG4 and 16x16 motion vectors of MPEG4 are produced successively based on the 16x16 motion vectors of MPEG2. Every other one of I frames and P frames of the bit stream of MPEG2 is dropped to produce a bit stream of MPEG4 of a reduced frame rate and a low bit rate.

(21) Appl. No.: 09/970,306

(22) Filed: Oct. 4, 2001

(30) Foreign Application Priority Data

Oct. 11, 2000 (JP) ..... P2000-310836

**Publication Classification**(51) Int. Cl.<sup>7</sup> ..... H04B 1/66; H04N 7/12;  
H04N 11/02; H04N 11/04

**DEVICE AND METHOD FOR MOTION VECTOR CONVERSION**

Patent Number: JP2001309389  
Publication date: 2001-11-02  
Inventor(s): SATO KAZUFUMI;; TAKAHASHI KUNIAKI;; SUZUKI TERUHIKO;; YAGASAKI YOICHI  
Applicant(s): SONY CORP  
Requested Patent: JP2001309389  
Application Number: JP20000129002 20000425  
Priority Number(s):  
IPC Classification: H04N7/32; H03M7/30; H03M7/36  
EC Classification:  
Equivalents:

---

**Abstract**

---

**PROBLEM TO BE SOLVED:** To avoid the reduction of encoding efficiency in the case of converting MPEG 2 image compressing information to MPEG 4 image compressing information.

**SOLUTION:** This device has a macro block information buffer 14 for storing parameter such as the 16×16 macro block of the MPEG 2, the 16×16 motion vector of the MPEG 2 and the an image size, and a motion vector conversion part 15 for selecting the 16×16 motion vector of the MPEG 2 of the 16×16 macro block of the MPEG 2 of the highest encoding efficiency based on a parameter stored in this macro block information buffer 14 to convert it to the 16×16 motion vector of the MPEG 5.

---

Data supplied from the [esp@cenet](mailto:esp@cenet) database - 12

**MOTION VECTOR CONVERSION APPARATUS AND ITS METHOD**

Patent Number: JP2002010267  
Publication date: 2002-01-11  
Inventor(s): TAKAHASHI KUNIAKI;; SATO KAZUFUMI;; SUZUKI TERUHIKO;; YAGASAKI YOICHI  
Applicant(s): SONY CORP  
Requested Patent: JP2002010267  
Application Number: JP20000191616 20000626  
Priority Number(s):  
IPC Classification: H04N7/32; H03M7/36  
EC Classification:  
Equivalents:

---

**Abstract**

---

**PROBLEM TO BE SOLVED:** To suppress the reduction of coding efficiency.

**SOLUTION:** This apparatus has a motion vector converting part 12 which converts  $16 \times 16$  motion vector of MPEG2 into  $8 \times 8$  motion vector of MPEG4, a motion vector adjusting part 13 which adjusts according to image size adjusting flag, a macro block information buffer 14, a motion vector converting part 15 which converts  $8 \times 8$  motion vector of MPEG4 into  $16 \times 16$  motion vector of MPEG4, and a motion vector generator 16 for MPEG2 intra-macro blocks. The motion vector generator 16 has a motion vector buffer which stores information in the unit of macro block or block, and a motion vector converting part which generates P-VOP motion vector, based on the information stored in the motion vector buffer.

---

Data supplied from the [esp@cenet](mailto:esp@cenet) database - 12